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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/489,652	01/24/2000	William G. Burroughs	KUC-718US	6089

			EXAMINER
46900	7590	11/28/2005	TANG, KENNETH

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ART UNIT	PAPER NUMBER
2195	

DATE MAILED: 11/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/489,652	BURROUGHS ET AL.
Office Action Summary	Examiner	Art Unit	
	Kenneth Tang	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 September 2005</u>.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>27-52</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>27-52</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This action is in response to the Amendment filed on 9/8/05. Applicant's arguments have

been fully considered but are moot in view of the new grounds of rejections.

2.   Claims 27-52 are presented for Examination.

Claim Rejections - 35 USC § 103

.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   **Claims 27-52 are rejected under 35 U.S.C. 103(a) as being unpatentable by Milton et**

al. (hereinafter Milton) (US 4,862,452) in view of Schwarz et al. (hereinafter Schwarz) (US

5,631,592).

4.   As to claim 27, Milton teaches in a system comprising a first processor (DSP module)

and one or more other processors (plurality of DSP modules), a method for applying one or more

interrupt signals to the one or more other processors (interrupt handshaking scheme) *(see*

Abstract, col. 1, lines 58-68, col. 2, lines 21-63), the method comprising:

        (a) generating, in the first processor, a data signal having one or more data bits is inherent

because the DSP sends a signal of data, wherein each data bit has either a first bit value or a

second bit value (logic high signal and logic low signal) *(col. 2, lines 21-68, col. 7, lines 3-4)*;

        (b) transmitting the data signal from a data port of the first processor to a signal unit

external to the first processor and the one or more other processors *(col. 2, lines 43-53)*;

(c) converting, in the signal unit, the data signal into one or more interrupt signals,

wherein each data bit in the data signal corresponds to a different interrupt signal (Digital to

Analog or Analog to Digital or serial to parallel, etc.) *(col. 2, lines 21-35 and 43-53)*; and

(d) transmitting each interrupt signal from the signal unit to an interrupt port of an other

processor (interrupt handshaking scheme, switch and main controller) *(col. 2, lines 21-63, col. 1,*

lines 58-68).

4.   Milton fails to explicitly teach the converting to be done by analyzing the big value of

each one of more data bits in the data signal, wherein each analyzed data bit in the data signal

having a specified bit value. However, Schwarz teaches a signal unit (timing unit 112) that

contains an edge detector unit 132 and registers 118, 120, etc., comparators 118, 122, etc. that

analyze data bit values of data signals *(col. 1, lines 42-67, col. 2, lines 32-65, Abstract, Fig. 1)*.

It would have been obvious to one of ordinary skill in the art at the time the invention was made

to combine Milton with Scharz because this would minimize software overhead *(col. 1, lines 66-*

67 and Abstract).

5.   As to claim 28, Milton teaches wherein the data signal has a plurality of data bits is

inherent because of the same reasons as shown in claim 27; the signal unit converts the data

signal into a plurality of interrupt signals *(col. 2, lines 21-35 and 43-53)*; and each interrupt

signal is transmitted to a different interrupt port of an other processor (interrupt handshaking

scheme, switch and main controller) *(col. 2, lines 21-63, col. 1, lines 58-68)*.

6.   As to claim 29, Milton teaches wherein at least two interrupt signals are transmitted to two different ports of a single other processor *(col. 2, lines 21-63, col. 1, lines 58-68)*.

7.   As to claim 30, Milton teaches wherein at least two interrupt signals are transmitted to interrupt ports of at least two different other processors (bidirectional communication between plurality of DSP modules) *(col. 2, lines 21-63, col. 1, lines 58-68)*.

5.   As to claim 31, Scharz teaches wherein the signal unit detects a transition in each data bit of the data signal over time to determine when to generate a corresponding interrupt signal (edge detector 132 in timing unit 112) *(col. 1, lines 42-67, col. 2, lines 32-65, Abstract, Fig. 1)*.

6.   As to claim 32, Scharz teaches storing sequential values for the corresponding data bit in two registers; and comparing outputs from the two registers to detect a difference between the two sequential values (comparator) *(col. 1, lines 42-67, col. 2, lines 32-65, Abstract, Fig. 1)*.

10.   As to claim 33, Milton teaches the first processor transmits an address signal to the signal unit; and the signal unit compares the address signal to a specified value to determine whether to store the two sequential values in the two registers *(col. 1, lines 58-68, col. 4, lines 44-55)*.

11.   As to claim 34, Milton teaches wherein each interrupt signal is transmitted from the signal unit to a corresponding interrupt port of a corresponding other processor via a dedicated line *(col. 1, lines 27-42)*.

12.   As to claim 35, Milton teaches wherein the data signal is transmitted from the first

processor to the signal unit via a shared data bus (bidirectional PCM links) *(col. 2, lines 21-63,*

col. 1, lines 58-68).

13.   As to claim 36, it is rejected for the same reasons as stated in the rejection of claim 27. In

addition, Milton teaches switching and bidirectional communication of DSP modules as well as a

Circuit switch matrix 3 and a Peripheral Switch Matrix 5D *(col. 2, lines 21-63, col. 1, lines 58-*

68, Fig. 1).

14.   As to claim 37, Milton teaches wherein at least one other interrupt signal is transmitted

from the other signal unit to an interrupt port of at least one other processor *(col. 2, lines 21-63,*

col. 1, lines 58-68).

15.   As to claims 38-48, they are rejected for the same reasons as stated in the rejections of

claims 27-37.

16.   As to claims 49-50, they are rejected for the same reasons as stated in the rejections of

claims 1 and 35.

17. · As to claim 51, it is rejected for the same reasons as stated in the rejection of claim 1.

18.   As to claim 52, it is rejected for the same reasons as stated in the rejections of claims 27,

34-35 and 38. In addition, Milton teaches at least two interrupt signals are transmitted to two

different interrupt ports of a single processor (transmission to one or more input/output ports)

(see claim 9). Schwarz teaches detecting a transition in each data bit of the data signal over time

to determine when to generate a corresponding interrupt signal (edge detector 132, etc.) *(col. 1,*

lines 42-67, col. 2, lines 32-65, Abstract, Fig. 1).

Response to Arguments

7.   Applicant's arguments have been fully considered but are moot in view of the new

grounds of rejections.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kt
11/17/05

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